

NOAA
FISHERIES

Federal Programs Office 2021 Annual Report



A Message from the Regional Administrator

We are pleased to announce that in fiscal year 2021 (FY21), the Federal Programs Office of the NOAA Fisheries Pacific Islands Regional Office (PIRO) funded 49 project activities totaling \$9,684,558 in grants and cooperative agreements to constituents in support of the NOAA Fisheries mission. We issued the awards through competitive and non-competitive financial assistance programs. Recipients of the federal awards included 32 U.S. and international agencies and organizations from American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Guam, Hawai'i, and the greater Pacific.



Michael D. Tosatto

PIRO manages programs that support both domestic and international conservation and management of living marine resources within the Pacific Islands region (PIR), which comprises American Samoa, the CNMI, Guam, Hawai'i, and other U.S. Pacific Islands. Our vision is to achieve healthy marine ecosystems that provide:

- Stability for fishery resources
- Recovery of threatened and endangered species
- Enhanced opportunities for commercial, recreational, and cultural activities in the marine environment

PIRO assists the Western Pacific Fishery Management Council (WPFMC) in developing fishery management plans and amendments for offshore fisheries based in the Western Pacific region. In addition to PIRO and the WPFMC, the NOAA Pacific Islands Fisheries Science Center (PIFSC) and the NOAA Office of Law Enforcement (OLE) collaboratively support the conservation and management of marine fisheries, protected species, and marine habitat. Working together and employing regional expertise, these offices are committed to providing improved customer service and stewardship of living marine resources within this expansive geographic region.

Going forward, our efforts will continue to focus on capacity building and proposal-development training for Hawai'i and the territories. We will also work with communities to develop innovative projects that help NOAA Fisheries provide stewardship of living marine resources through science-based conservation and management in our region.

A handwritten signature in black ink, appearing to read "M. D. Tosatto".

Front cover: As a Marine Education and Training Grant awardee, Kupu will partner with schools and stewardship organizations to host a work-based learning elective for students. Students will learn about important marine habitats and wildlife of O'ahu, Hawai'i and apply their knowledge with hands-on stewardship activities. Credit: Anna Daniels

Back cover: CNMI fisherman pulls in his catch at a deep bottom fishing demonstration. Credit: Anthony Guerrero



Three local CNMI fishermen catching tuna for bait. Credit: Lino Tenorio

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Federal Programs Office

The Federal Programs Office is located at the NOAA Inouye Regional Center in Honolulu, Hawai'i. With technical assistance from PIRO and PIFSC staff, Federal Program Officers administer financial assistance agreements throughout the award period, from the initial solicitation through post-award management.

They also work closely with the NOAA Grants Management Division, technical monitors, and grant recipients throughout the award period. This helps to facilitate the successful completion of each grant's project objectives.

The Federal Programs Office supports the NOAA Fisheries mission through competitive and non-competitive grants, and cooperative agreements. PIRO funded the following grant programs during FY21:

- Western Pacific Fishery Management Council
- Saltonstall-Kennedy Grants Program
- Pacific Islands Region Marine Turtle Management and Conservation Program
- Hawaiian Monk Seal Recovery and Marine Mammal Response Program
- Marine Education and Training Program
- Interjurisdictional Fisheries Act of 1986
- Habitat Conservation Program
- Pacific Islands Region International Fisheries Program
- Sustainable Recreational and Non-Commercial Fishing Program
- Promoting Responsible Wildlife Viewing Program

PIRO Federal Program Officers



Scott Bloom



Penny Larin

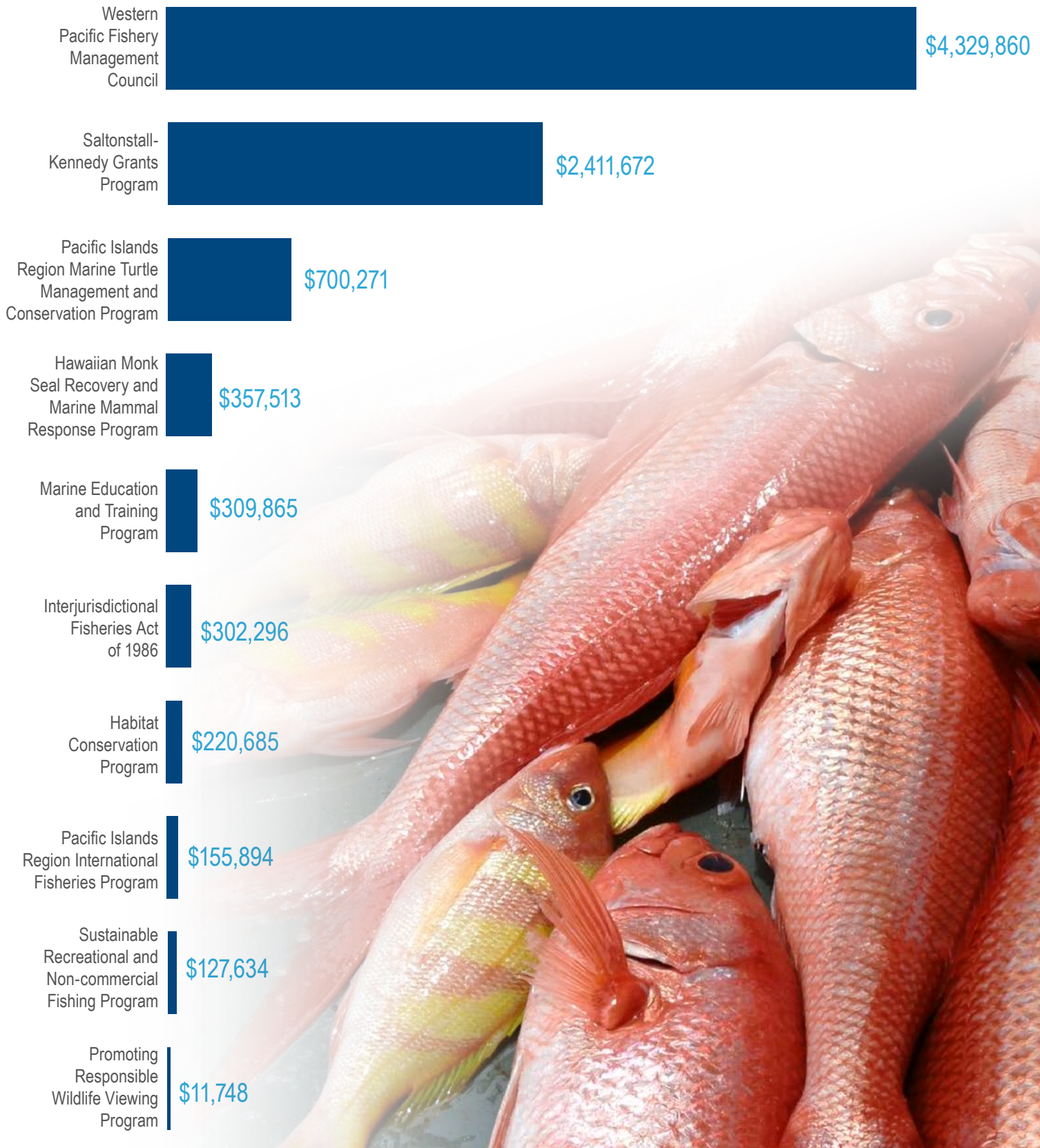


Mela Flores



Atrium at the NOAA Inouye Regional Center in Honolulu, Hawai'i. Credit: NOAA Fisheries

Summary of Fiscal Year 2021 Funding



Bottomfish ready for sale at the market. Credit NOAA/Okeanos Explorer

Western Pacific Fishery Management Council

The WPFMC prepares, monitors, and revises fishery management plans for domestic and foreign fishing within the 200-mile U.S. Exclusive Economic Zone (EEZ) in the western and central Pacific Ocean. PIRO is in charge of implementing the management measures created by WPFMC and NOAA OLE; the U.S. Coast Guard 14th District and local enforcement agencies enforce the measures. In FY21, PIRO funded the second year of a 5-year cooperative agreement to support the WPFMC base administration and operations. The WPFMC received \$4,329,860 for the following 14 activities under this 5-year cooperative agreement:

- | | |
|---|--|
| 1. Council Base Administration and Operations (\$3,177,260) | 9. Council Education Committee Scholarships (\$62,500) |
| 2. Annual Catch Limits Implementation (\$197,528) | 10. SAFE Report Coordinator (\$30,000) |
| 3. Territorial Science Initiative (\$164,000) | 11. Fisheries Indicators for Small Pelagic Species (\$85,000) |
| 4. Council Peer Review (\$142,075) | 12. Continuation of Tori Line Trials (\$50,000) |
| 5. Magnuson-Stevens Act Implementation (\$89,235) | 13. Log-it Application Support (\$100,000) |
| 6. National Environmental Policy Act (NEPA) (\$88,998) | 14. Hawai'i Electronic Reporting and Vietnamese Translation (\$50,000) |
| 7. Scientific and Statistical Committee (\$55,764) | |
| 8. Council Education Committee Internships (\$37,500) | |



QUEST alumni and past interns Alphina Liusamoa (third from left) and Fuamai Tago (third from right) both received full scholarships to complete their bachelor degrees in marine science at University of Hawai'i Hilo from the WPFMC in April 2019. Credit: WPFMC

Western Pacific Sustainable Fisheries Fund

The Magnuson-Stevens Fishery Conservation and Management Act, when reauthorized in 1996 and 2006, included authorities in Section 204(e) to permit foreign fishing within the EEZ in the Pacific Islands Region. Before permitting foreign fishing under a Pacific Insular Area fishery agreement, the WPFMC must develop a 3-year Marine Conservation Plan (MCP) that describes the uses for any funds collected by the Secretary of Commerce (Secretary). The CNMI and the Territories of Guam and American Samoa must develop similar MCPs.

The Sustainable Fisheries Fund serves as a repository for:

- Permit payments the Secretary receives for foreign fishing in the EEZ around Johnston Atoll, Kingman Reef, Palmyra Atoll, Jarvis, Howland, Baker and Wake Islands
- Fines and penalties the Secretary receives, in the case of violations by foreign vessels occurring in the EEZ around these Pacific Islands
- Funds or contributions received in support of conservation and management objectives under an MCP, as well as payments made pursuant to specified fishing agreements with the Territories

Western Pacific Regional Fishery Management Council Western Pacific Sustainable Fisheries Fund XIII (\$505,374)

This is a multi-year cooperative agreement to implement projects identified in the Territory of American Samoa and CNMI MCPs. Funding for the cooperative agreement comes from the Western Pacific Sustainable Fisheries Fund authorized under the Magnuson-Stevens Conservation and Management Act (Section 204(e)(7)(A)). Funds are derived from Specified Fishing Agreements between U.S. Participating Territories of American Samoa and CNMI and vessels permitted under the Council's Fishery Ecosystem Plan for Pacific Pelagic Fisheries of the Western Pacific Region. Regulations covering Specified Fishing Agreements and associated deposits into the Western Pacific Sustainable Fisheries Fund can be found at 50 CFR 665.819.

In FY21, PIRO awarded the Western Pacific Sustainable Fisheries Fund 13 (SFF13) grant in the amount of \$505,374 to support the eight activities described below in American Samoa and the CNMI.

AMERICAN SAMOA (\$252,687)

Installation of Reinforced Pilings for DMWR Fuel Dock (\$142,687)

This effort will strengthen and reinforce the existing infrastructure of Fagatogo Marina Fuel Dock by installing four pilings at the fuel dock that were damaged by the 2009 tsunami. Research suggests this area will experience more intense and frequent severe weather, which further emphasizes the need to ensure this dock is reinforced. This floating dock is critical—it's used by the Alia fishing vessels taking part in the local government's fuel subsidy program during refueling operations.

Ice House and Machine (\$55,000)

The American Samoa Department of Marine and Wildlife Resources (DMWR) is proposing to build an ice house and purchase an ice machine at its work station in Fagatogo at the southwestern-most end of Pago Pago Harbor. The proposed project will support the rehabilitation of the American Samoa small boat fishery, which suffered a fisheries resource disaster caused by the South Pacific Tsunami of September 29, 2009.

Bottom Fish Education & Awareness (\$5,000)

Under this project, the local DMWR and the WPFMC will work with the American Samoa Advisory Panel and Council staff to review existing outreach material used to educate the fishing and broader community about the bottomfish fishery and current management issues.

THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS (\$252,687)

Smiling Cove Transient Dock Repairs (\$73,287)

This project will repair and replace key components of the Smiling Cove Marina Transient Dock, fulfilling Objective 4 of the MCP. The repairs will maintain this dock as a safe and efficient fisher access point. In the past decade, the facility has taken on damage from numerous typhoons, including Typhoon Soudelor and Super Typhoon Yutu most recently. On a given day prior to the COVID-19 restrictions, the facility would accommodate over 500 passengers to and from

Managaha Island, a popular tourist destination. The additional use has compounded the wear and tear of the dock and it is in need of repair to prolong its use and provide a safe structure for its patrons.

Vessel Support: Operations & Maintenance (\$72,000)

This proposal supports the associated costs to safely run both the JUSTICE vessel & KIRIDA vessel, in particular the vessels' operations, fuel, and maintenance costs. These vessels have been utilized to support a variety of conservation actions and are intended to continue to support enforcement and fishery development activities. More specifically, this funding helps achieve operational needs for education, research, enforcement, and management.

MCP Coordinator (\$57,400)

The CNMI will hire a half-time MCP Coordinator to oversee the SFF13 funded projects for 2 years. This Coordinator will report directly to the Secretary of DLNR, who in turn will prioritize and manage

the Coordinator's workload and determine the day-to-day scope and duties of the position. In addition to administering this grant and related projects, the individual will facilitate updates and revisions deemed necessary for the overarching CNMI Marine Conservation Plan.

U.S. Pacific Territories Fishery Capacity-Building Scholarship Program (\$50,000)

In the Western Pacific Region, individuals and local communities have a low understanding of and engagement in fisheries stewardship and management due to limited resources and expertise in the island areas. This project proposes to support one student from the CNMI to participate in the Council's Capacity Building Scholarship/Fellowship program for 1 year (two semesters and one summer internship).

In 2014, the U.S. Pacific Territories Fisheries Capacity Building Memorandum of Understanding (MOU) was signed by federal and territorial agencies with fisheries management responsibilities in the U.S. Pacific Islands Territories and six higher education institutions based in Hawai'i, American Samoa, Guam, and the CNMI. In the ensuing 5 years, representatives from these agencies and institutions participated in the Education Committee of the WPFMC to reach goals set out in the MOU. Through the 2014 MOU, the U.S. Pacific Territories Fishery Capacity Building Scholarship was developed and has been running with financial support from the Council, PIRO, and PIFSC. This is the first effort on behalf of the CNMI to financially augment these efforts through their Marine Conservation Plan.

Western Pacific Sustainable Fisheries Fund

In addition to the cooperative agreement, PIRO funded a single financial assistance award to support WPFMC's Protected Species Conservation and Management Program. The award, totaling \$251,746, encompasses the following two activities:

1. Protected Species Conservation and Management Coordination (\$200,000)
2. Development of Leatherback Satellite Tag Deploying Device (\$51,746)



The WPFMC has recommended and supported shark depredation studies in the Mariana Archipelago to better understand the impact of fisher-shark interactions on fishing communities. Credit: James Borja

Saltonstall-Kennedy Grant Program

The Saltonstall-Kennedy (S-K) Grant Program is a nationally competitive program administered by NOAA Fisheries. The program provides financial assistance through grants and cooperative agreements for research and development projects that benefit the U.S. fishing industry. The program's statutory authority is the S-K Act, as amended (15 U.S.C. 713c-3). The S-K Act established a fund for the Secretary of Commerce to provide funding support for projects addressing aspects of U.S. fisheries, including, but not limited to, harvesting, processing, marketing, and associated infrastructures. In 2021, PIRO allocated \$2,411,672 for nine projects.

Hawai'i Seafood Council — Hawai'i Seafood Marketing in the Age of COVID (\$300,000)

The COVID pandemic devastated the demand for locally sourced seafood in Hawai'i. This project focuses on the branding and promotion of Hawai'i Seafood to support the local fishing and seafood operations and bring back market demands within Hawai'i and the United States. The project will help Hawai'i respond to changes in the fishery and seafood markets, as well as how seafood is purchased and consumed in the COVID era. The project will assess fishing operations and seafood market conditions and then work to strengthen the Hawai'i Seafood brand through the development and marketing of a promotion strategy, updated branding, and other marketing tools. This project expects to build fishing resilience, long-term sustainability, and industry relations with the community.

Republic of Palau — Operationalizing Offshore Pelagic Fisheries in the Palau National Marine Sanctuary (PNMS) Through a Public-Private Partnership to Benefit Local Fishing Communities (\$300,000)

Through a private-public partnership, this project will strengthen the fledgling domestic fishing industry (longline, purse seine, pole-and-line, and artisanal) in the PNMS by stabilizing supply and demand, improving capacity (skills and facilities) to process and create added-value products, and increase the number of participants in pelagic fisheries. The project will improve operational and business practices



Belau Offshores Fisheries Inc. offloading operations in Palau. This is where the catch is graded, sold to local customers and vendors, and further processed. Credit: Ministry of Agriculture, Fisheries and Environment (Previously Ministry of Natural Resources, Environment and Tourism)

to consistently supply Grade A fish locally for food security and increased economic benefits for Palauans. It will also establish a training program for processing and added-value operations to maintain high quality food, achieve leading competitive product prices, engage women and underserved peoples, and collect data on supply and demand in a Palauan central market place.



*University of Central Florida (UCF) undergraduate Camille Acevedo sorts deep water bottomfish tissue samples.
Credit: UCF/Michelle Gaither*

University of Central Florida — Moving Toward Science-Driven Management of Bottomfish Stocks in Guam and the CNMI (\$300,000)

A study from the University of Central Florida will contribute critical bottomfish scientific data by identifying biologically relevant stocks, estimates of larval dispersal, and direction of gene flow. It will also pinpoint sources of new recruits into subsistence and commercial fishing grounds. Currently, bottomfish stocks are defined on jurisdictional boundaries and the resulting stock assessments are hindered by uncertainty. Our project will prevent waste of management resources, and it will provide meaningful stock definitions and data required to develop proper stock assessments upon which catch limits are based. We will build on existing and ongoing collections by collaborating with local fishers on Guam to create the most expansive collection of genomic tissue resources in the Pacific.

University of Hawai'i: Kapiolani Community College — Hawai'i Seafood Culinary Best Practice Digital Promotion (\$299,985)

Under the University of Hawai'i, this culinary project creates user-friendly, hands-on cooking instruction for seafood. These instructions come in the form of digital content through (1) "Video Recipe Cards" for home cooks with recipes, and (2) professional-level

cooking instructions for culinary students and novice food service industry cooks without formal training. Available for free, the content will be marketed and disseminated via social media and can be viewed using portable mobile platforms. This strategy is designed to overcome the uncertain trajectory of reopening of the State and barriers to revival of the food service industry after a massive market shrinkage. Home cooking and online instructions take the marketing directly to homes and workplaces, eliminating the costly and physically prohibitive method of seafood festivals and events. The marketing activities and impact of the project goes beyond the 2-year project period.

Pacific American Foundation — Establishing a Supply and Training Program for Aquaculture Production of Hawaiian Sea Cucumber (\$299,154)

The Pacific American Foundation is working to develop a sea cucumber aquaculture that benefits coastal communities in Hawai'i with the production of a high value, low trophic species that feeds on waste. Native sea cucumbers require no feed input and may offer a sustainable source of income for Hawaiian fishpond (loko i'a) operators. The project will develop hatchery methods and facilities at the Nōmilo Fishpond, operated by Kaua'i Sea Farm in Kalāheo, Hawai'i. The facility includes a small-scale hatchery for bivalve production, with much of the basic infrastructure already in place to accommodate sea cucumber production. Pacific American Foundation will conduct applied research into innovative production methods and an outreach program for the aquaculture and coastal fishing communities. The project will benefit Hawaiian fishpond practitioners and commercial aquaculture operators wishing to expand revenue streams using integrated multi-trophic aquaculture.

MarAlliance — Expanding Domestic Marketing and Commercial Export Opportunities for Micronesian Value-added Nearshore Pelagic Fish Products (\$299,035)

This project aims to improve current market operations and economic opportunities in Pohnpei. The current market is the sole producer of these products in Micronesia, and while it's popular locally, sales opportunities are limited. Exporting these products to the U.S., Asia, and Guam will serve as a blueprint to

expand economic opportunity and decrease inshore fishing pressure within the region by increasing prices for raw products and developing export markets for raw and value-added products. New product development and an expanded market will create additional opportunities for fishers and partnered fish markets to use existing and under-utilized species.

Hawai'i Pacific University: Oceanic Institute — Engaging Hawai'i's Fishing Community to Establish Marine Aquaculture Techniques for Kumu, an Endemic Hawaiian Goatfish (*Parupeneus porphyreus*) (\$295,409)

This project will establish aquaculture technology for the kumu (Hawaiian whitesaddle goatfish), an overfished species highly regarded among local recreational and commercial anglers for its cultural and economic value. The Oceanic Institute collaborates with PIFG, the State of Hawai'i Division of Aquatic Resources (DAR), Paepae o He'eia, and Conservation International - Hawai'i to accomplish project objectives and collect kumu broodstock. With its developed and effective technology for broodstock conditioning, live feeds production, and larval rearing of marine fish including yellow tang and red coral grouper at commercial scale, the Oceanic Institute will begin by applying these techniques with kumu. If successful, DAR will help evaluate cultured kumu juveniles for release into Hawaiian fishponds and local reefs through their existing fish tagging program.



Racks of clams are pressure washed and sorted on the Kaula Sea Farm sorting dock. The clams will be sold in local Kaula markets. Credit: Kaula Sea Farm

Pacific Islands Fisheries Group — Development of Hawai'i Squid Fishery and Marketable Products (\$119,283)

This Pacific Islands Fisheries Group (PIFG) project evaluates the development of the local ika (squid) fishery by educating fishermen in Hawai'i about the potential of targeting ika for sale to local restaurants and markets. With increased understanding of the species, gear, method, timing, cost, and uses, fishermen can assess their interest, entry costs, and potential of targeting and selling fresh local squid. Fishermen will receive information on product handling on the boat to ensure the freshest and highest quality product is maintained for commercial sale of "sashimi-grade" fish markets in Hawai'i. PIFG will provide fresh, locally caught ika to a diverse group of participating restaurants to evaluate against frozen, imported squid and show the benefits of marketing fresh-caught ika. PIFG will also introduce fishermen to freeze-dried ika as bait, as opposed to frozen squid, which offers many benefits as it is room-temperature stable, light, and compact, and it has a long shelf life.

Poseidon Fisheries Research, LLC — Community Management of a Data and Capacity Limited Coral Reef Fishery in American Samoa (\$198,806)

Poseidon Fisheries Research, LLC will work with the American Samoa local fishing community to build a community-based fishing management program using the FishPath process. This management approach allows local managers to work with the fishing community in developing context-specific and adaptive options for targeted coral reef species management. The project will collect life history information on five species deemed most vulnerable by the community, and then use the information in data-limited assessments to target management goals and stock indicators. By including stakeholders in the entire process of species identification, data collection, stock assessment, and management, the community can self-regulate and manage their own resources to produce a more sustainable fishery. A more effective implementation of management strategies brings sustainability to an economically and culturally important coral reef fishery.

Pacific Islands Region Marine Turtle Management and Conservation Program

The PIR Marine Turtle Management and Conservation Program (MTMCP) implements the recovery plans for the U.S. Pacific sea turtle populations by supporting programmatic activities for Endangered Species Act (ESA) listed sea turtle species. These species may occur entirely within the PIR or have documented linkages to the PIR, such as sea turtles that originate from areas outside of U.S. jurisdiction but migrate through or forage within the PIR, or are impacted by PIR federally-managed activities and therefore relevant to NOAA Fisheries management and recovery obligations. Projects supported by the MTMCP aim to implement regional management priorities and species-specific monitoring, protection, or conservation needs as outlined in the recovery plans. They also complement ongoing federal, state, or international activities and align with current agency initiatives (such as the Species in the Spotlight Pacific leatherback sea turtle initiative). In 2021, PIRO issued 11 federal assistance awards totaling \$700,271 to help progress and complement multi-agency domestic and international sea turtle recovery efforts.



World Wildlife Fund, Inc — Implementing a Strategy to Address the Direct Take of Leatherbacks (*Dermochelys coriacea*) in the Kei Islands, Indonesia (\$108,147)

The Western Pacific leatherback turtle subpopulation in the Kei Islands has decreased by more than 80% and is projected to decline by 96% by 2040. In the Kei Islands of Maluku Province, Indonesia, where nine villages hunt and consume turtles, these leatherbacks congregate to forage on large aggregations of jellyfish. WWF has worked to develop a multi-layer strategy to reduce the ongoing leatherback hunt. It has formed a robust regional monitoring program and engaged in broad outreach efforts that have reduced leatherback take from a high of 103 turtles in 2017 to 5 in 2019. Through close collaborations with government agencies and civilian sectors, early conservation gains are promising, and the continued support for these activities will be instrumental in achieving a more permanent solution.



The Nature Conservancy Solomon Islands staff and partners conducted a highly successful community consultation and awareness roadshow during which they visited 14 communities in December 2020. The meetings build community awareness of the importance of conserving the Sasakolo. Credit: The Nature Conservancy

The Nature Conservancy — Effective Co-Management of Leatherback Turtle Nesting Beaches in Solomon Islands (\$97,556)

Under this project, The Nature Conservancy (TNC) supports community efforts to protect and monitor leatherback turtle nesting beaches in the Solomon Islands and the Isabel Provincial Government (IPG). Activities raise local awareness of the plight of the leatherback turtles. The project will encourage and strengthen communities in Haevo, Sosoilo, and Sasakolo in conservation competency to effectively protect and monitor leatherback nesting beaches during peak nesting seasons. It will also increase capacity to further develop turtle conservation in the IPG by establishing a position for a turtle conservation officer. The TNC project increases understanding of leatherback turtle conservation by supporting a local women's group, KAWAKI. To conduct community outreach, KAWAKI is producing a short film on leatherback conservation at Sasakolo.

World Wildlife Fund, Inc. — An Analysis of the Status of Sea Turtles in the Philippines (\$93,074)

By increasing and improving the data available to governments, conservationists, and fisheries, this project seeks to reduce the removal of marine turtles in the Philippines. Through research and knowledge sharing, the project will address the two main means of turtle removal: fishery bycatch and illegal wildlife trade. Staff will conduct a series of rapid bycatch assessments to measure the level of interaction and bycatch of marine turtles in both small-scale fisheries and small commercial fisheries. Using these results, the project will identify and implement bycatch mitigation strategies with the buy-in of stakeholders and local communities, all the while continuing to support Filipino authorities tasked with combating illegal wildlife trafficking.

The University of the South Pacific — A Multidisciplinary Approach to Monitor Green Turtles From the Central South Pacific Distinct Population Segment Aggregating at Three Foraging Grounds in Fiji, Central South Pacific (\$84,978)

The University of the South Pacific project uses satellite tracking to improve understanding of green turtle habitat use at three foraging grounds around

Yadua and Makogai Islands in Fiji. The project collects data on habitat use and impacts from cyclones and El Niño Southern Oscillation in the green turtle Central South Pacific distinct population segment. Surveys conducted on the three foraging grounds monitor aggregating turtles and assess their regional connectivity. During site visits, project staff capture and flipper-tag turtles, as well as check their health status and measurements. They also record habitat plant and macroalgae composition to assess ecological health. Enhanced knowledge improves protection and conservation measures for decision making by Pacific countries on sea turtle management.

The Honu Project — Strengthening Monitoring Efforts for Hawksbill Sea Turtles on Hawai'i Island With the Hawai'i Island Hawksbill Turtle Recovery Project (\$83,935)

To protect and monitor hawksbill turtles residing in the Hawaiian archipelago, the Hawai'i Island Hawksbill Turtle Recovery Project monitors nesting activities on beaches, protects nests, and ensures hatchlings safely reach the ocean. It promotes public stewardship for coastal and marine ecosystems through educational outreach. It implements relevant and innovative management techniques to assist in the recovery of these turtles. It also collects critical information on the nesting hawksbill population throughout the season to further control any non-native species found on nesting beaches. The project will analyze, share, and discuss its data with the Hawai'i Hawksbill Turtle Network and use it to influence management decisions and the implementation of recovery strategies.

World Wildlife Fund, Inc. — Leatherback Sea Turtle Nesting Dynamics in the Maluku Region (\$79,918)

The World Wildlife Fund (WWF) closely monitors the critical habitat of the surviving population of leatherback sea turtle nesting sites on Buru Island. The Indonesian archipelago is a critical habitat for the surviving population, but their numbers have dramatically declined in part due to egg harvesting and direct take from nesting beaches and foraging grounds. The protection of adult females and nests made Buru Island the first substantial nesting population discovered outside of Papua in the last decade. For continued conservation, WWF works to



An HMAR team member removes a circle hook from a sea turtle with assistance from a community member. HMAR sea turtle activity is conducted pursuant to 50 CFR 222.310. Credit: HMAR

expand nest characterization, monitoring, and satellite tag deployment on adult turtles for further research. Striving to improve and extend the community and government outreach, WWF will ultimately transition conservation responsibility over to capable and enthusiastic local, provincial, and regional governments.

Hawai'i Marine Mammal Alliance DBA Hawai'i Marine Animal Response — Sea Turtle Stranding and Rescue Response (O'ahu) (\$44,743)

This Hawai'i Marine Animal Response (HMAR) project provides a high-quality staff-, volunteer-, and intern-based stranding and rescue response program on O'ahu for dead, injured, or otherwise compromised marine turtles. The program continues to grow and maintain a comprehensive network of staff, volunteers, and interns to improve turtle and human interactions through educational outreach. HMAR receives, processes, and manages reports from the

public and others concerning marine turtle strandings (actual or potential); provides fully-trained and vetted personnel to respond to these reports; and conducts these activities in close collaboration with the NOAA PIFSC Marine Turtle Biology and Assessment Program and the NOAA PIRO Marine Turtle Management and Conservation Program.

Maui Ocean Center Marine Institute — Sea Turtle Stranding Response and Outreach Program in Maui, Phase Two (\$35,058)

This Maui Ocean Center Marine Institute (MOCMI) project is focused around a volunteer-based stranding response program on the Island of Maui for dead, injured, or otherwise compromised sea turtles. MOCMI will maintain and implement a comprehensive volunteer network that will improve turtle and human interactions through educational outreach. MOCMI will receive, process, and manage reports from the public and others concerning sea turtle strandings on Maui,

and it will provide fully-trained and vetted volunteers to respond to strandings in close coordination with NOAA. MOCMI will use the stranding response data to improve understanding in the community through education and outreach efforts. MOCMI promotes conservation initiatives and accessible environmental education with fishermen through social media and on its website. Programs to reduce the threats impacting sea turtles include expanding a fishing line recycling program. This project allows MOCMI to increase outreach efforts and expand sea turtle stranding response, rescue, and rehabilitation capabilities.

International Seafood Sustainability Foundation — Definition of Guidelines to Reduce the Impact of Lost and Abandoned Fish Aggregating Devices (FADs) on Marine Turtles (\$34,862)

This project will define guidelines and conservation recommendations to reduce the impact of lost and abandoned drifting Fish Aggregating Devices (dFADs) on sea turtles in the Pacific Ocean. Fishers use dFADs to increase tropical tuna species catches; however, around 20% of these FADs are lost or abandoned every year. Entanglement in dFAD netting is known to cause incidental deaths of marine megafauna such as sea turtles. New guidelines may reduce the occurrence of deaths associated with entanglement in dFADs. They may also help protect turtle habitats damaged by dFAD strandings. Information for these guidelines comes from the cooperation of key stakeholders across the Pacific Ocean (fishers, ship-owners, and scientists).

Government of Guam: Department of Agriculture, Division of Aquatic & Wildlife Resources — Guam Fibropapillomatosis Sea Turtle Assessment (\$20,000)

The Guam Department of Agriculture, Division of Aquatic & Wildlife Resources (DAWR) will begin an assessment and management of the endangered green sea turtles around Guam affected with fibropapillomatosis (FP), a tumor-causing disease that mainly affects green sea turtles. With seven confirmed cases of FP around Guam, this project will gather information on the severity of FP found in sea turtles and will identify if FP has spread throughout Guam's waters or if it is contained to one area. DAWR plans to conduct bimonthly in-water surveys around Guam to monitor the sea turtle population and capture and tag

up to 42 green sea turtles and 7 hawksbill sea turtles. DAWR will conduct standard biometrics and tagging procedures, and it will release turtles not physically affected by FP to see if FP is spreading within the population. DAWR will collaborate with local partners and stakeholders to update, inform, and educate about the status of FP and Guam's sea turtles.

Mālama na Honu — Mālama na Honu Sea Turtle Management and Outreach Project (\$18,000)

The Mālama na Honu project focuses on reducing and managing human harassment and disturbance of green sea turtles at Laniakea Beach, O'ahu. The structured and maintained program provides a viable orientation, on-site training, and monitoring instruction for volunteers. This cadre of trained volunteers then conducts daily outreach and education with an ever-increasing number of visitors at the location. Volunteers teach about the turtles' life cycle, foraging habits, migration, and nesting behavior to schools, clubs, service groups, and tourist venues. The project strives to bring awareness and implementation of strategies to mitigate turtle strikes. It collects and analyzes data on basking turtles at Laniakea and makes it available on Mālama na Honu's website.



Fish Aggregating Devices (FADs) washed up on a beach on O'ahu, Hawai'i. Credit: Makanakai Marine Services/Hank Lynch

Hawaiian Monk Seal Recovery and Marine Mammal Response Program

The Hawaiian Monk Seal Recovery and Marine Mammal Response Program supports specific programmatic activities related to promoting the recovery of endangered Hawaiian monk seals and supporting responses to marine mammal strandings in the main Hawaiian Islands and U.S. Territories. This program supports community-based and community-integrated projects with an educational component designed to elevate public awareness and build capacity from the community for Hawaiian monk seal recovery and marine mammal response. In 2021, PIRO allocated \$357,513 in five projects.

The Marine Mammal Center — Hawaiian Monk Seal Response and Community Engagement (\$143,703)

The project conducts community outreach and monitoring efforts to inspire visitors and residents to protect and monitor Hawaiian monk seals within Hawai'i Island. The Marine Mammal Center (TMMC) strengthens and standardizes a volunteer team with specialized response-dispatch training. This training also helps expand data collection that allows TMMC to identify shifts in monk seal behavior. TMMC provides key partners' staff and volunteers with training and materials for haul-out events. The center places an increased focus on areas with low levels of engagement and sightings, updating signage to encourage sighting reports and appropriate behavior around monk seals.

Hawai'i Marine Mammal Alliance DBA Hawai'i Marine Animal Response — Hawaiian Monk Seal Conservation & Recovery - Priority 1 - O'ahu (\$115,162)

NOAA and HMAR have a common goal—the preservation, recovery, and stewardship of the Hawaiian monk seal. HMAR has developed significant capacity, infrastructure, and experience in three key areas: outreach and education; dispatch and reporting; and field response, escalations, and interventions. HMAR uses these capabilities to conduct activities, measured using Key Operational Indicators, that have a direct and positive impact on Hawaiian monk seal



*Hawaiian monk seal spotted off Kaimana Beach on O'ahu, Hawai'i.
Credit: Dana Jones*

preservation and recovery. The thousands of outreach, education, hotline, dispatch, field response, escalation, and intervention support activities each year have positively impacted monk seal health, management, recovery, and public support. HMAR works with NOAA and Hawai'i DLNR.

Hawai'i Marine Mammal Alliance DBA Hawai'i Marine Animal Response — Hawaiian Monk Seal Recovery and Conservation - Priority 1 - Moloka'i (\$51,248)

A key Hawaiian monk seal species recovery challenge in the main Hawaiian Islands is fatal human-caused trauma. In recent years, Moloka'i has, unfortunately, maintained a high ratio of human-caused seal deaths to the island's small human population. This project adds staff from the Moloka'i community and increases activity and support for monk seal stewardship as one part of broader, community-based, sustainable coastal ecosystem management practices that benefit the residents of Moloka'i while also honoring their cultural identity and traditions. HMAR works cooperatively with Hawai'i DLNR, TMMC, and other partners to achieve the goals of the Hawaiian Monk Seal Recovery Plan (2007) and the Main Hawaiian Islands Monk Seal Management Plan (2015).

State of Hawai'i: Department of Land and Natural Resources, Division of Aquatic Resources — Hawaiian Monk Seal and Sea Turtles Response, Recovery, and Monitoring on Kaua'i (\$35,000)

This project supports DAR's Protected Species Program (PSP) efforts related to endangered and threatened marine species on the island of Kaua'i. PSP facilitates community engagement, rapid response to emergency situations, recovery, and outreach opportunities through the Kaua'i Monk Seal Hui while managing a monk seal volunteer network on the island. The PSP maintains a unique position with local stakeholders to develop a future that allows for successful co-existence between monk seals, sea turtles, and humans. The outcomes and benefits of this project include increased management capacity, reduced or mitigated seal and turtle take, and increased community participation and compliance via long-term relationship and trust-building activities with the public.

Dana Jones DBA Hawaiian Monk Seal Preservation 'Ohana — Hawaiian Monk Seal Recovery Through Education and Preservation (REAP) (\$12,400)

The Hawaiian Monk Seal Preservation 'Ohana (HMSPO) expands the current programs that support the goals, objectives, and activities that address management strategies outlined in the Main Hawaiian Islands Monk



The Hawaiian Monk Seal Preservation 'Ohana conducts Hawaiian monk seal outreach on Kaimana Beach, O'ahu, Hawai'i. Credit: Dana Jones

Seal Management Plan for the Island of O'ahu. Through education and outreach, community engagement, and capacity building, HMSPO's REAP project activities support health, partnership, community engagement, and education strategies to upgrade and expand in-classroom education programs, increase volunteer workforce, grow outreach to communities and at pupping events, develop partnerships for conservation, educate through information sharing, and integrate historical and cultural awareness.



Did You Know?

Interactions with inshore fishing gear can injure and even kill Hawaiian monk seals. Each of the main Hawaiian Islands has a highly trained team prepared to respond to hooked or entangled seals. Supported in part with NOAA Fisheries grants, this Kaua'i team includes: (from left to right) volunteers Charlie and Sue Fafard; Jamie Thomson with NOAA Fisheries; Dr. Mimi Olry with DAR; and volunteers Connie Clune, and Becky Moore. The large circle hook and line displayed in this photo was successfully removed from a seal on a Kaua'i Beach by this experienced team.

Credit: NOAA Fisheries

Marine Education and Training Program

In 2007, the Magnuson-Stevens Reauthorization Act was amended to include §305 (j), which provides guidance on the development of a marine education and training program. Public Law 109-479 states: “the Secretary shall, in cooperation with the Western Pacific Fishery Management Council, establish programs that will improve communication, education, and training on marine resource issues throughout the region and increase scientific education for marine-related professions among coastal community residents, including indigenous Pacific Islanders, Native Hawaiians, and other underrepresented groups in the region.” The Pacific Islands Region Marine Education and Training Program was established to meet Congressional intent. In 2021, PIRO allocated \$309,865 in eight projects.

University of Hawai‘i: Department of Biology — Support of Marine Option Program (2020-2025) (\$150,000)

To provide experiential opportunities for students with ocean-related interests, the Marine Option Program (MOP) offers marine education programs and activities for undergraduates across more than 40 disciplines. MOP continues to provide career counseling, help students identify and implement hands-on internships and research projects to meet their MOP certificate requirements, liaise with project mentors, and monitor student progress. MOP also provides scientific diving opportunities, which help to teach aspects of hands-on underwater-surveying practices and principles courses.

Hawai‘i Academy of Science — Hawai‘i State Science & Engineering Fair (\$80,000)

Every student in the State of Hawai‘i has the opportunity to participate in a science fair activity, helping to build interest in marine and natural sciences. The science fair provides a platform for students to use the scientific method to investigate questions and solve problems in the real world. High school students interact with leading scientists in Hawai‘i to conduct in-depth and comprehensive science investigations. Exposure to science activities could provide a catalyst to increase the number of students

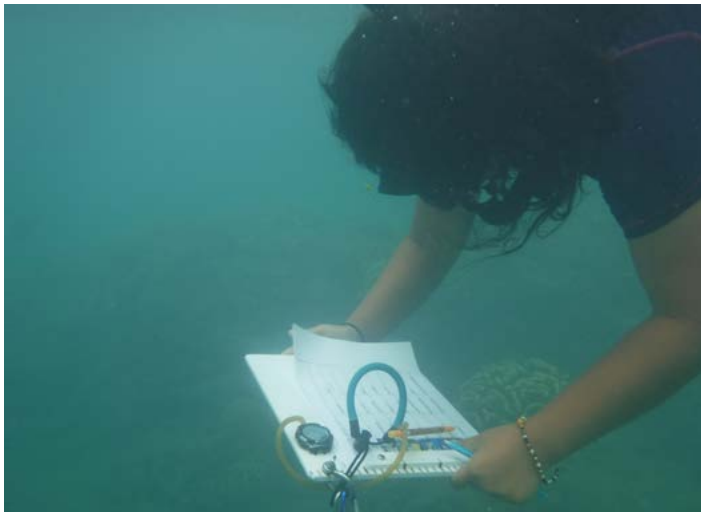
in Hawai‘i pursuing advanced degrees in areas of study related to STEM (Science, Technology, Engineering, and Math). The Hawai‘i State Science and Engineering Fair connects students, scientists, and teachers by leveraging partners and donors and offering scholarships and awards to winners. It has temporarily moved to a virtual format, requiring an innovative approach to this effort.

500 Sails — Carolinian Fishing Canoe (\$15,000)

Through a collaboration between a traditional Carolinian canoe builder and 500 Sails’ canoe builders, the project will build a Carolinian fishing canoe and use it in sustainable fishing programs. On the CNMI island of Saipan, the project will use the traditional Carolinian sailing canoe to create a blueprint and specifications for construction of a prototype fishing canoe using modern materials. The completed canoe will undergo sea trials and be optimized for fishing. A public ceremony will inform the community about the goals and progress of the project. Prominent Carolinian cultural leaders who are traditional navigators and Fishermen will teach and train indigenous Micronesian fishers about sustainable and conservation-minded fishing that combines both traditional approaches and modern methods that support government-led conservation efforts.



Lino Tenorio, local CNMI fisherman, provides instruction on deep bottom fishing during a classroom presentation. Credit: Marcy Tenorio



A student from Maui High School practicing her newly learned skills of in-water marine surveying in Kaho'olawe. Credit: Hawai'i Department of Land and Natural Resources, Kaho'olawe Island Reserve Commission

Project Update

Through the Hawai'i Department of Land and Natural Resources, Kaho'olawe Island Reserve Commission, five Maui high school students and two teachers got an opportunity of a lifetime to receive education and training at Kaho'olawe during a 4-day, 3-night trip. This trip provided the aspiring marine scientists with a wide range of experiences, including coastal and upland restoration, in-water survey techniques, traditional observational monitoring methods, ancient cultural sight visits, and daily review and reflections.

Poseidon Fisheries Research, LLC — Hawaiian Community Reef Fish Cookbook-Food, Science, & Tradition (\$15,000)

Poseidon Fisheries Research will partner with students of Umeke Ka'eo: University of Hawai'i Maui College Gastronomy Club to produce written recipes from oral recipes from fishers of locally harvested reef fish. In a test kitchen, students will ensure that each recipe has the correct proportion of ingredients. This project helps culinary students prepare for future careers in seafood marketing and other seafood-related operations by giving them the experience in cooking with locally sourced seafood and building relationships with local fishers. The cookbook can be used as a resource to learn which species to target and ways to prepare fish. The cookbook will also include information about traditional fishing

practices and how to sustainably harvest fish based on size at reproduction, maximum age, and ecosystem function for each species. This coral reef fish cookbook will increase the community's involvement in sustainable fishing.

University of Hawai'i: Hawai'i Sea Grant College Program — Continuing to Build Pacific Islander Capacity Through Training in Underwater Surveying Techniques 2021–2022 (\$15,000)

This project builds local capacity in marine science in American Samoa. The project will recruit Pacific Islander students to pursue fisheries and marine science careers through place-based, community-driven scientific training via participation in an underwater surveying training course developed for undergraduates. The conducted training is a modified snorkeling version of the Quantitative Underwater Ecological Survey Techniques (QUEST) course conducted by the University of Hawai'i MOP. Participating students gain hands-on experience, new technical skills, and knowledge of marine resources that increase job competitiveness and strengthen their desire to pursue a career in marine science or related fields. Sea Grant will recommend participants for future internship or research opportunities and encourage them to pursue higher degrees in marine science or seek gainful employment with local agencies.

Kupu — Kupu Environmental Education (\$14,998)

Through collaboration, Kupu will offer a Work-Based Learning elective to promote careers within the conservation fields, including marine-based professions in their educational program called Coastal Stewards with Hawai'i Technology Academy and Waipahu High School. The program's environmental science lessons focus on the natural environments of O'ahu, with special attention to wetland ecosystems, watersheds, and fresh and saltwater ecosystems. Students meet with the Kupu Educator at specific work sites within the Waipahu and Pearl Harbor coastal plain to engage in cultural restoration and conservation work. Students will have opportunities to learn from conservation professionals and community elders about the significance of the environment, particular work site, type of work, and importance of marine stewardship. The curriculum engages theoretical application gained through field experience.

Kua'āina Ulu 'Auamo — Oral History Documentation of Fishpond and Aquaculture Practitioners in Hawai'i (\$11,750)

This project focuses on the documentation of oral history to highlight the innovative and pioneering spirit of the elder generations of aquaculturists in Hawai'i. Importantly, this project will include interviews with elders of the indigenous aquaculture community of loko i'a practitioners, many of whom are community activists who fought to protect fishponds from destruction and further loss. Kua'āina Ulu 'Auamo will document and uplift the lived experiences of loko i'a practitioners as a means to ensure the incorporation of restorative aquaculture as a crucial part of our food systems and to continue supporting NOAA's long-term mission goal of resilient coastal communities and economies. Kua'āina Ulu 'Auamo will recruit local youth across three different islands to participate as interns, fostering intergenerational learning with seasoned experts in the fields of both modern aquaculture and traditional fishpond practice.

Government of Guam: Department of Administration, Bureau of Statistics and Plans — Guam Student Microplastics Research Program (\$8,117)

The Guam Student Microplastics Research Program encourages high school students to pursue careers in marine science, natural resource management, and sustainability by empowering them with training to generate novel scientific research on microplastics and share their findings. Students will contribute to a multi-school research project measuring microplastics on seagrass blades and study microplastics in seawater samples. They will review the various data collected, discuss implications and shortcomings of their findings, and brainstorm ways to share their work on social media to raise awareness of microplastics pollution. This project improves our understanding of the prevalence of microplastic pollution and increases awareness of this issue and how to mitigate it. Students can utilize their microplastics monitoring training for future monitoring efforts and science projects.



Water samples containing microplastics can be found from different areas such as coral reefs, boat ramps, and seagrasses. Credit: Cara Lin

Project Update

Approximately 500 students participate in the Guam Island Wide Science Fair each year. For the past few years, these students have had a chance to win a highly coveted marine science internship under the tutelage of a scientist from the University of Guam Marine Laboratory. Supported by an MET grant, the internship program nurtures students' marine science interests through mentorship and training in various scientific skills, including microscopy techniques and data and statistical analysis, among others.

In this last year of funding, two students won the award: Miwa Gudmundsen, whose internship project focuses on temperature stress in corals; and Felix Gong, who is researching the morphological characteristics of staghorn coral species around Guam for his internship project.

Ultimately, the program hopes students will pursue STEM degrees in college and eventually return to Guam, helping to build capacity for marine science and STEM in the region.

Interjurisdictional Fisheries Act of 1986

The Interjurisdictional Fisheries Act of 1986 assists states in managing interjurisdictional fisheries resources. Apportionment to states is based on the average value and volume of raw fish that domestic commercial fishermen land. The data obtained is the principal source of information and analysis for the fisheries activities and management options that are used to address federal requirements for fisheries management plans under the jurisdiction of NOAA Fisheries. In 2021, PIRO allocated \$302,296 to four projects.

American Samoa Government: Department of Marine and Wildlife Resources — American Samoa Interjurisdictional Fisheries Stock Assessment and Monitoring Program (\$164,538)

DMWR of the American Samoa Government assesses and monitors the status of interjurisdictional fish species caught within the American Samoa EEZ. The resulting data is the main source of information used to address local and federal requirements for a Fishery Ecosystem Report under the jurisdiction of the American Samoa DMWR and NOAA Fisheries through the WPFMC. Through the cooperative efforts between federal and local agencies, fisheries information provides a timely developed, implemented, and evaluated Fisheries Ecosystem Report for the territory of American Samoa and the WPFMC.

State of Hawai'i: Department of Land and Natural Resources, Division of Aquatic Resources — Fisheries Act Award Application - State of Hawai'i (\$105,716)

DAR is modernizing the commercial marine licensing and fisheries reporting systems (CMLS) for the State of Hawai'i. The agency has nearly 3,800 fishermen required to obtain commercial marine licenses to offer marine life for commercial purposes in the State and 3,000 commercial fishermen submitting monthly fishing reports. Per Hawai'i Revised Statute §189-10, DAR also collects transaction purchase reports from 255 active primary commercial marine dealers. Both federal and state fisheries agencies use this integrated best-available data to assess the status of marine resources and to establish fishery regulations in State

and U.S. EEZ waters. It is essential, therefore, that timely and accurate fisheries data are available for fisheries agencies to make informed management decisions.

Commonwealth of the Northern Mariana Islands: Division of Fish and Wildlife — Data Collection and Entry in Interjurisdictional Fishery Resources (\$16,021)

During fishing tournaments, the CNMI Division of Fish and Wildlife collects, processes, and shares important fisheries monitoring data. This principle source of information provides the CNMI with an analysis of fisheries activities and management options of pelagic landings during tournaments. Data further equips federal and local fisheries management programs in the CNMI and assists in addressing federal requirements for Fisheries Management Plans under the jurisdiction of NOAA Fisheries through WPFMC. A record of fisheries data guides in the development, implementation, evaluation, and amendment of fishery management plans in the Western Pacific region.

Government of Guam: Department of Administration, Bureau of Statistics and Plans — Data Collection and Entry in the Management of Guam's Interjurisdictional Fishery Resources (\$16,021)

Data collection of the interjurisdictional fisheries provides local and federal officials with vital information to effectively manage and sustain Guam's fishery resource. Guam has collected data of transshipped species offloaded by longline vessels at Guam's commercial port, and it has entered this data into a computer-based data processing system, in coordination with the NOAA Fisheries Western Pacific Fishery Information Network program. While the tuna transshipment company closed on December 31, 2020, the Bureau of Statistics and Plans requests to maintain this program objective on the data collection and entry of transshipped species offloaded at Guam's maritime port of entry should operations resume.

This project will also collect and computerize fisheries-dependent data from the domestic fisheries on Guam under the Commercial Landings Data Collection program.

Habitat Conservation Program

Throughout the Pacific Islands Region, habitat protection efforts include programs to conserve, protect, and restore marine habitat and coastal ecosystems. Increasing partnerships with other federal and local authorities allows NOAA to maintain and restore healthy coastal ecosystems and implement strategies that minimize threats. The most biologically diverse yet threatened marine ecosystems are coral reefs. In 1996, the amended Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1855(b)) established a new requirement to identify and describe Essential Fish Habitat to identify and protect against local stressors (overfishing, pollution, and habitat destruction) and global stressors (climate change, coral bleaching, and ocean acidification). The goals of Essential Fish Habitat help to maintain productive fishery species life cycles from spawn to maturity and rebuild depleted fish stocks in the United States. In 2021, PIRO allocated \$220,685 for two projects.

University of Hawai'i; Hawai'i Institute of Marine Biology — Developing Multiple Stressor Thresholds for Reef-Building Coral Species in the Pacific Islands Region in Support of Essential Fish Habitat Management (\$180,685)

This project will identify potential environmental and anthropogenic (human-caused) factors that may influence the long-term resilience of coral reef ecosystems and assess both its resistance and resilience to episodic events in specific populations, locations, and habitats. Through systematic gray literature and meta-analysis, the project will develop a framework to manage thresholds for sedimentation and other co-stressors on nearshore coral reefs and associated ecosystems. Understanding and quantifying the impacts of anthropogenic stressors of reef-building corals, including synergistic effects and critical threshold values in the Pacific ecosystems, will enhance the management of coral reefs and the fisheries habitat that they provide.

State of Hawai'i: Department of Land and Natural Resources, Division of Aquatic Resources — Life History Information for Key Hawai'i Coral Reef Fish Species (\$40,000)

DAR has identified life history data gaps of Hawaiian coral reef fish species needing more effective management. This project collects specimens across a range of sizes and throughout the annual cycle; prepares samples; measures, visually assesses, and preserves gonads; extracts and preserves otoliths; and conducts data analysis and reporting. Lack of life history information impedes the development of effective regulations for some of these species. DAR has identified nenu (rudderfish, *Kyphosus spp.*), munu (doublebar goatfish, *Parupeneus bifasciatus*), and moano kea (blue goatfish, *P. cyclostomus*) as priority species with life history data gaps. It will focus sampling efforts on O'ahu but may preserve specimens from other islands for future research projects.



A school of surgeonfish. Credit: NOAA Fisheries/Robert Schroeder

Did You Know?

PIRO's Habitat Conservation Division (HCD) initiates or supports efforts to protect, restore, and conserve marine and coastal habitats throughout the U.S. Pacific Islands Region. Through effective partnerships and coordination with other federal and local resource partners, including local communities, HCD supports the management of complex coastal ecosystems by reducing fishing-related impacts and addressing coastal and marine degradation challenges.

Did You Know?

The giant manta ray is the world's largest ray with a wingspan of up to 29 feet. They are filter feeders that eat large quantities of zooplankton. Giant manta rays are slow-growing, migratory animals with small, highly fragmented populations that are sparsely distributed across the world. The main threat to the giant manta ray is commercial fishing, with the species both targeted and caught as bycatch in a number of global fisheries throughout its range. Manta rays are particularly valued for their gill rakers, which are traded internationally. In 2018, NOAA Fisheries listed the species as threatened under the Endangered Species Act.

Credit: Joshua Stewart



Pacific Islands Region International Fisheries Program

This grant program supports projects to inform conservation and management practices for international fisheries and transboundary marine resources in the western and central Pacific Ocean (WCPO). Past and present awards include projects for protected species such as marine mammals, sea turtles, sharks and mobula rays. Projects may also focus on a broad range of initiatives related to international fisheries in the WCPO, such as protected species interactions, ecosystems and biodiversity, maritime security, regional fisheries capacity building, and strengthening international partnerships. Projects funded in 2021 include initiatives to enhance data collection and develop mitigation and release protocols to aid in the recovery of newly ESA-listed transboundary protected species. In 2021, PIRO funded one project under the international fisheries program in the amount of \$155,894.

International Seafood Sustainability Foundation, Inc. — Addressing key research to Inform Mobula Rays Conservation in the Pacific Ocean (\$155,894)

This project aims to improve estimates of Mobula ray interactions and mortality rates in WCPO purse seine fisheries, improve understanding of genetic population structure of Mobula rays, develop methods for minimizing bycatch, and identify handling and release methods to minimize post-release mortality. The project includes four specific objectives: 1) quantify the rate of interaction of the purse seine fishery with the various Mobula species, with emphasis on giant manta rays, and collect samples to identify unique stocks for management using genomic methods; 2) define and test handling and safe-release best practices for Mobula rays, including gear modifications, and evaluate Mobula ray post-release survival rate using survivorship tags; 3) train fishers and observers to identify and sample Mobula rays and educate crew on best handling and safe-release practices for Mobulas; and 4) disseminate the result of this project to fishers, scientists, managers and the general public.

Sustainable Recreational and Non-Commercial Fishing Program

This grant program supports both recreational and non-commercial fishing projects in the PIR that improve sustainable fishing opportunities, maintain stability of fish stocks, and protect cultural fishing traditions. As recreational and non-commercial fisheries in the region are major economic contributors to coastal communities, this industry holds both essential social and cultural significance in the region through the perpetuation of subsistence and traditional fishing practices. Projects funded share a common theme of using local knowledge and citizen science to inform best management practices. In 2021, PIRO funded five recreational and non-commercial fishing program projects in the amount of \$127,634.

500 Sails — Peskan Tāddong (Deep Bottomfishing) (\$30,000)

The Peskan Tāddong project will expand the base of deep bottomfishing practitioners in the CNMI by having expert local fishers share their knowledge of both traditional and modern fishing methods and teach novice fishers the art of deep bottomfishing. Through formal classroom instruction and on-the-water demonstrations and practice, participants will gain understanding of the priorities, concerns, and challenges faced by the CNMI fishing community. They'll learn where the fishing grounds are and how to safely reach them, how to use traditional and modern fishing gear and accessories, how to target specific fish species at different depths, resource conservation and sustainable practices, night vs. day fishing strategies, boating safety, and how to safely store and handle fresh catch. The project will also develop a bottomfishing teaching curriculum and outreach materials to inform and promote deep bottomfishing to the CNMI public.

Poseidon Fisheries Research, LLC — Fishing Tournaments as a Means to Support Local Fishing Communities and Promote Citizen Science (\$30,000)

These recreational fishing tournaments will create opportunities to bring fishers and the community together while focusing on providing valuable



Researchers Cassie Pardee and Joe Giglio sample pāpio during fishing tournament on O'ahu, Hawai'i. Credit: WPFMC/Zach Yamada

biological data to fisheries researchers. Two fishing events will include a marine debris cleanup and educational workshops on the first day followed by the fishing tournament the next day. Fishers who participate in the first day cleanup and workshops will be entered into the tournament free of charge. The tournaments will be designed to maximize data collection on each of the fish captured. Participants will learn about the life history of local reef fish while collecting otoliths and gonads from the fish to supplement their research, and they will receive insightful information while samples are taken for analysis. The project will film fishing events to observe all of the different research that is currently being conducted and offer a means to connect and contribute to the research.

Pacific Islands Fisheries Group — Enhance Next-Generation Fishermen Engagement In Pacific Islands Small Boat Pelagic And Bottomfish Fisheries, Conservation And Management (\$29,530)

PIFG will produce 10 short “how to” videos on small boat bottomfish and pelagic fishing (gear, methods, weather, technology, safety, and management). The videos will highlight rules and regulations governing fisheries and resources management. This project promotes, supports, and develops sustainable fisheries by addressing local fishing community needs for basic fishing knowledge and information to further encourage new and continued participation in Pacific Island bottomfish and pelagic fisheries. The videos will be released via PIFG social media posts targeting the Pacific Islands small boat communities in Hawai‘i, American Samoa, Guam, and CNMI. PIFG will bridge the gap between experienced fishers and those

interested in entering the fishery, allowing them to share knowledge. PIFG will track and evaluate the project’s reach and success through social media.

Mariana Islands Nature Alliance — Installation and Maintenance of Monofilament Line Collectors for Recreational Fishing (\$22,000)

This monofilament line collectors project promotes best practices for marine debris and responsible fishing by recreational and non-commercial fishermen on the island of Rota and Tinian, CNMI. The successful installation and use of the receptacles aid in the prevention of fishing lines entering the ocean in 14 high-use areas in Tinian and seven sites in Rota. After fabricating and installing the collectors, complete with signage and decals, the project will launch a campaign to inform the public of the receptacles and how they benefit the protection of marine resources for future generations. Volunteers from non-profit organizations and clubs will maintain the collectors and properly dispose of contents while maintaining data to determine the collectors’ efficacy.

Na Kama Kai — The Lawai’a Pono Project Promoting Sustainable Recreational Fishing Practices Based on Traditional Hawaiian Practices (\$16,104)

To address overfishing of reef fish in Hawai‘i and other environmental concerns, youth living on the leeward coast of O‘ahu will be inspired and empowered to become responsible fishers that adopt a life-long stewardship ethic for our precious marine resources. This project targets ocean safety and conservation awareness, and it increases the capacity of youth through Hawaiian values, culture, and environmental education. Under the guidance of accomplished fishers, keiki (children) will enjoy a culturally relevant ocean experience of fishing, learn the basics about the art of safe fishing, experience the enjoyment of spending time close to the ocean, and build self-respect to ensure sustainable fishery resources. They will learn about native marine and terrestrial ecosystems, watersheds, aquaculture, and the current demands and impacts on natural resources in Hawai‘i.



A Mariana Islands Nature Alliance summer intern tracks data at fishing gear collection sites at Outer Cove Marina on Saipan. Credit: Mariana Islands Nature Alliance



Hawaiian spinner dolphins. Credit: NOAA Fisheries

Promoting Responsible Wildlife Viewing Program

Hawai'i is home to many indigenous marine plants and animals, attracting people from all over the world who seek out experiences in the marine environment. The wildlife tourism industry in Hawai'i has significantly increased over the last decade, placing more viewing pressure on charismatic protected marine species, including dolphins, whales, monk seals, and sea turtles. Both visitors and residents in Hawai'i encounter these animals daily, and these interactions can often disrupt the animals' important natural behaviors, such as resting, feeding, sheltering, and caring for young. Although these experiences can benefit protected wildlife by promoting species awareness and conservation, wildlife viewing should be performed in a way that is safe for people, minimizes harmful disturbance to wildlife, and is in compliance with the law. NOAA Fisheries has created Responsible Marine Wildlife Viewing Guidelines — <https://go.usa.gov/xwPMn> — for Hawai'i to help commercial and recreational viewers behave safely when they encounter these animals in the wild. NOAA Fisheries also manages the Dolphin SMART program, which promotes responsible stewardship of wild dolphins and other protected marine wildlife by offering training to and guidelines for commercial wildlife viewing tour operators. In 2021, PIRO issued one federal assistance award to support the Dolphin SMART program, totaling \$11,748.

Sustainable Tourism Association of Hawai'i DBA Hawaii Ecotourism Association — Sustainable Tourism Association of Hawai'i and Dolphin SMART: Certifying Responsible Wildlife Viewing (\$11,748)

This learning module systems project will improve a tour operator certification program that assists in educating Hawai'i visitors and residents on responsible wildlife viewing, with an emphasis on dolphin conservation and stewardship. Wildlife viewing is an ongoing management challenge with a negative impact on the survival of protected species. With a collaborative and education-based approach, this project promotes sustainable tour and travel practices through certified credits required for national tour guide interpretation accreditation. It encourages statewide sustainable tourism educational campaigns with an updated website and active social media accounts. Tour operators can access and use a growing library of education and outreach material about responsible wildlife viewing. This project cultivates partnership relationships to improve the wellbeing of the residents, environment, and culture of Hawai'i.

2021 Unfunded Federal Programs

The following programs were not funded in FY21 due to budgetary constraints:

Western Pacific Demonstration Projects: Public Law 104-297 (16 U.S.C. 1855) authorizes grants for Western Pacific Demonstration Projects that foster and promote the involvement of communities in the Western Pacific.

Native Fishery Observer Program: The NOAA Fisheries Observer Program is responsible for providing longline observers, who obtain data on incidental sea turtle takings and collect fishing effort data. The observers document interactions of all protected species, tally fish that are kept and discarded, and process selected specimens for life history. The Native Fishery Observer Program targets Native Hawaiian, American Samoan, and other Pacific Islander residents for employment as fishery observers in the Hawai'i and American Samoa fisheries.

Hawai'i Seafood Program: The Hawai'i Seafood Program is an effort to help strengthen the economic viability of the fishing and seafood industry of Hawai'i through activities that promote Hawai'i fisheries as high-quality and safe domestic seafood produced by a responsible and well-managed fishery.



The Hawaii Seafood Council visited the Honolulu Fish Auction to inspect fish landings. They also learned how the fish auction operates, and about quality and seafood safety control measures. Each day's fish landings are identified and tracked using barcoded tags from the vessel to the buyer and beyond. Credit: Hawaii Seafood Council



U.S. Secretary of Commerce
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